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# Market and Operations Analysis of Golf Courses in Connecticut

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# Market and Operations Analysis of Golf Courses in Connecticut

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## TABLE OF CONTENTS

	Page
INTRODUCTION	3
The Problem	3
Objectives	3
Sources of Data	4
SIZE OF THE CONNECTICUT GOLF COURSE MARKET	4
THE SUPPLY SIDE OF THE MARKET	5
Ownership Organization	5
Growth of Golf Course Firms	5
Location of Golf Course Firms	7
Maximum Golfer Capacity of the Market	9
THE DEMAND SIDE OF THE MARKET	12
Consumer Demand and Attendance	12
Growth in the Golfer Population	13
Seasonal Pattern of Attendance	14
Daily Attendance Patterns	14
COMPARISON OF ATTENDANCE RATES WITH CAPACITY RATES	15
OPERATIONS MANAGEMENT FOR PROFIT	16
Estimates of Return on Investment	16
Evaluation of Income Prospects	20
Management Strategies	20
SUMMARY	21
REFERENCES	22
APPENDICES	23

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# Market and Operations Analysis of Golf Courses in Connecticut

*Marvin Kottke<sup>1</sup>*

## INTRODUCTION

### **The Problem**

During most of the summer over 15,000 persons per day play golf on Connecticut's 169 golf courses. On some weekend days and holidays the number may rise to over 65,000 golfers. Golf is one way that many people can enjoy outdoor recreation in an open space environment. To provide the facilities for meeting this golfing demand, golf course owners have developed and converted relatively large tracts of farm or forest land into landscaped fairways, tees and greens. Now with demand for golf growing and the price of land sky-rocketing, prospects of increasingly overcrowded golfing conditions appear imminent. Faced with increasing costs and erratic seasonal golfing demand patterns, golf course managers play a key role in adjusting their operations to provide consumers with recreational satisfaction while at the same time maintaining an economically sound business structure.

### **Objectives**

The purpose of this report is to present data and information pertinent to both golfers and golf course operators. A well-functioning market depends on well-informed participants. This report presents information on growth trends in the golfing market, capital investment requirements of owning a golf course and the income potential from operating a golf course. One of the objectives is to present a perspective of the prevailing demand and supply situation. A second objective is to present estimates of the economic variables associated with producing income in a golf course situation.

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*1. Professor Agricultural Economics. The helpful assistance of Douglas Armstrong, Fred Nemergut and Robert Sim are gratefully acknowledged.*

## Sources of Data

Information for this study was gathered from several sources and over a period of several years. Primary data for Connecticut were obtained from personal interview surveys taken in 1971 and 1974 (Appendix Table 1 presents the basic survey data). Operators of twenty-one golf course firms were interviewed. They were selected as representative of the various types and sizes of golf course firms in Connecticut. Secondary data were obtained largely from National Golf Foundation reports. Other sources of golf information include the Connecticut State Golf Association, the Connecticut Office of State Planning and the Connecticut Development Commission.

## SIZE OF THE CONNECTICUT GOLF COURSE MARKET

The golf course market is small when compared to agriculture and other major industries in the state. On the other hand, it is quite large when compared to other recreational enterprises. For example, it is more than 10 times larger than the campground market in terms of resources used.

Connecticut's 169 golf course firms<sup>1</sup> have an estimated capital value of over \$100 million (Table 1). Compared with campgrounds, golf is almost 3 times larger in number of firms, and more than 10 times larger in capital value.<sup>2</sup> Labor employment is also about 10 times greater. Volume of business is much more intensive in golf than in campgrounds with gross returns being about 50 times greater for the market as a whole.

Probably one reason the golf course market is large compared to the campground market is that the golf market is older (the average age of golf course firms is 33 years). Another likely reason is that golf is favored with a fairly long operating season compared to many other outdoor recreational enterprises.

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1. In this report, we shall define a **golf course firm** as a unit of one or more "golf courses" under one management. Some units may have an 18-hole course plus another course or two, e.g. an added 9-hole course to make a 27-hole golf course firm. Although a unit of golf facilities is popularly called simply a "golf course," we sometimes need to distinguish between the unit as a whole and the courses included in the unit when there are more than one course to a unit.

2. For data on campgrounds, see Kottke, M., Operations Analysis of Campgrounds in Connecticut, Storrs Ag. Exp. Sta. Bul. 432, November 1974, p. 6.



**Table 1. Estimates of Land, Capital and Labor Resources Employed and Gross Returns Generated by Connecticut Golf Course Firms, 1974<sup>1</sup>**

Item	Unit	Average per Firm	Total for All Connecticut Golf Course Firms
Golf Course Firms	No		169
Land	Acres	140	23,698
Capital Value	\$	686,920	116,089,390
Labor	No. Workers	12	2,028
Gross Returns	\$	154,764	26,155,116

1. Estimated by using data from the 1971 and 1974 Surveys of Connecticut Golf Course Firms.

## THE SUPPLY SIDE OF THE MARKET

### Ownership Organization

Three types of owner organizations supply golfing facilities, namely, private, daily fee and municipal. Private golf courses are owned by a club and are used primarily by members but are usually open to the public on a limited basis. Daily fee courses are owned by an individual or a corporation and are open to the public. Municipal courses are owned by a municipality (i.e., publically-owned) and are open to the public. In Connecticut, private golf courses dominate (50 percent), whereas in the U.S. as a whole daily fee courses dominate (Table 2). Municipal courses are also relatively important in Connecticut (17 percent compared to 14 percent for the U.S.).

### Growth of Golf Course Firms

Golf course firms have grown both in number and in size of firm. In Connecticut, the growth rate in number of firms appears to be tapering off (Table 3). Between 1960 and 1970 the rate was about 4.5 percent per year, but since then it has declined to about 1 percent. (The data actually show a decline from 1972 to 1974, but this may be a temporary decline related to the 1974 recession.) It may also be worth noting that the rate of growth for Connecticut has been slower than for the U.S. as a whole. The rate for the U.S. was about 6 percent per year between 1960 and 1970, but has also slowed down since 1970.

**Table 2. Number of Golf Course Firms in the State, Regions and Nation, 1974<sup>1</sup>**

State and Region <sup>2</sup>	Type of Golf Course <sup>3</sup>	Type of Organization			
		Private	Daily Fee	Municipal	Total
			(Number)		
STATE					
Connecticut	R	80	48	27	155
	E&P	<u>5</u>	<u>8</u>	<u>1</u>	<u>14</u>
	Total	85	56	28	169
REGIONS					
Northeast	R	1034	1017	224	2275
	E&P	46	215	24	285
West	R	464	590	311	1365
	E&P	57	217	37	311
Northcentral	R	1362	1544	502	3408
	E&P	59	223	49	331
South	R	1632	885	372	2889
	E&P	61	187	22	270
NATION					
U.S.	R	4492	4036	1409	9937
	E&P	<u>223</u>	<u>842</u>	<u>132</u>	<u>1197</u>
	Total	4715	4878	1541	11134
(Percent)					
Connecticut total		50	33	17	100
U.S. total		42	44	14	100

1. Source: National Golf Foundation Information Sheet ST 1, *National Golf Foundation, Chicago, Ill., December, 1974.*

2. Northeast: Ct., Del., Me., Md., Mass., N.H., N.J., N.Y., Pa., R.I., Vt., W. Va. and D.C.

West: Alas., Ariz., Cal., Colo., Hi., Ida., Mont., Nev., N. Mex., Ore., Ut., Wash., and Wyo.

Northcentral: Ill., Ind., Ia., Kan., Mich., Min., Mo., Nebr., N. Dak., Ohio, S. Dak. and Wis.

South: Ala., Ark., Fla., Ga., Ky., La., Miss., N.C., Okla., S.C., Tenn., Tex., and Va.

3. R = regulation size and E&P = Executive and Par-3 courses. Golf firms with more than one type are counted in the category of its highest par course.

**Table 3. Growth in Number of Golf Course Firms in Connecticut and the U.S., 1939-74<sup>1</sup>**

Year	Number of Golf Course Firms		Index of Growth in Number of Firms (1969 = 100)	
	Conn.	U.S.	Conn.	U.S.
1939	97	5691	60	57
1960	113	6385	70	64
1962	125	7070	77	71
1964	138	7893	85	80
1969	163	9926	100	100
1970	166	10188	102	103
1972	172	10665	106	107
1974	169	11134	104	112

1. Source: National Golf Foundation Information Sheet ST 1, *National Golf Foundation, Chicago, Ill., 1969, 1970, 1972 and 1974 issues.*

While the growth in number of firms is slowing down, the size of firms in terms of number of fairways is evidently continuing to grow. From 1969 to 1974 the number of fairways increased about 5 percent per year (Table 4). The growth rate in fairways increased at a slightly greater rate for the U.S. as a whole. On the average, Connecticut's golf course firms are larger than the U.S. average (16.8 vs. 15 fairways per firm).

These data indicate that in recent years growth in the supply of golfing has come about through (1) increases in size from 9-hole courses to 18-hole courses, (2) increases in size from single course firms changing to multiple course firms and (3) to a lesser extent, increases in number of firms.

### **Location of Golf Course Firms**

From the 1971 and 1974 surveys of Connecticut golf course firms it was learned that the average market radius was 13 miles for 9-hole golf course firms and 28 miles for 18-hole golf course firms. Obviously relatively close proximity to urban centers is important in order to attract a sizeable market of golfers. Ironically, locating a golf course close to densely populated centers also means having to pay high land costs. The apparent importance of market proximity is shown in Figure 1. Notice that golf courses tend to be concentrated most heavily in a belt extending through Fairfield, New Haven and Hartford Counties which are densely populated counties. With energy shortages looming on the horizon and making travel more expensive it is doubtful that the urban-proximity location pattern of golf course firms will change much in the near future.



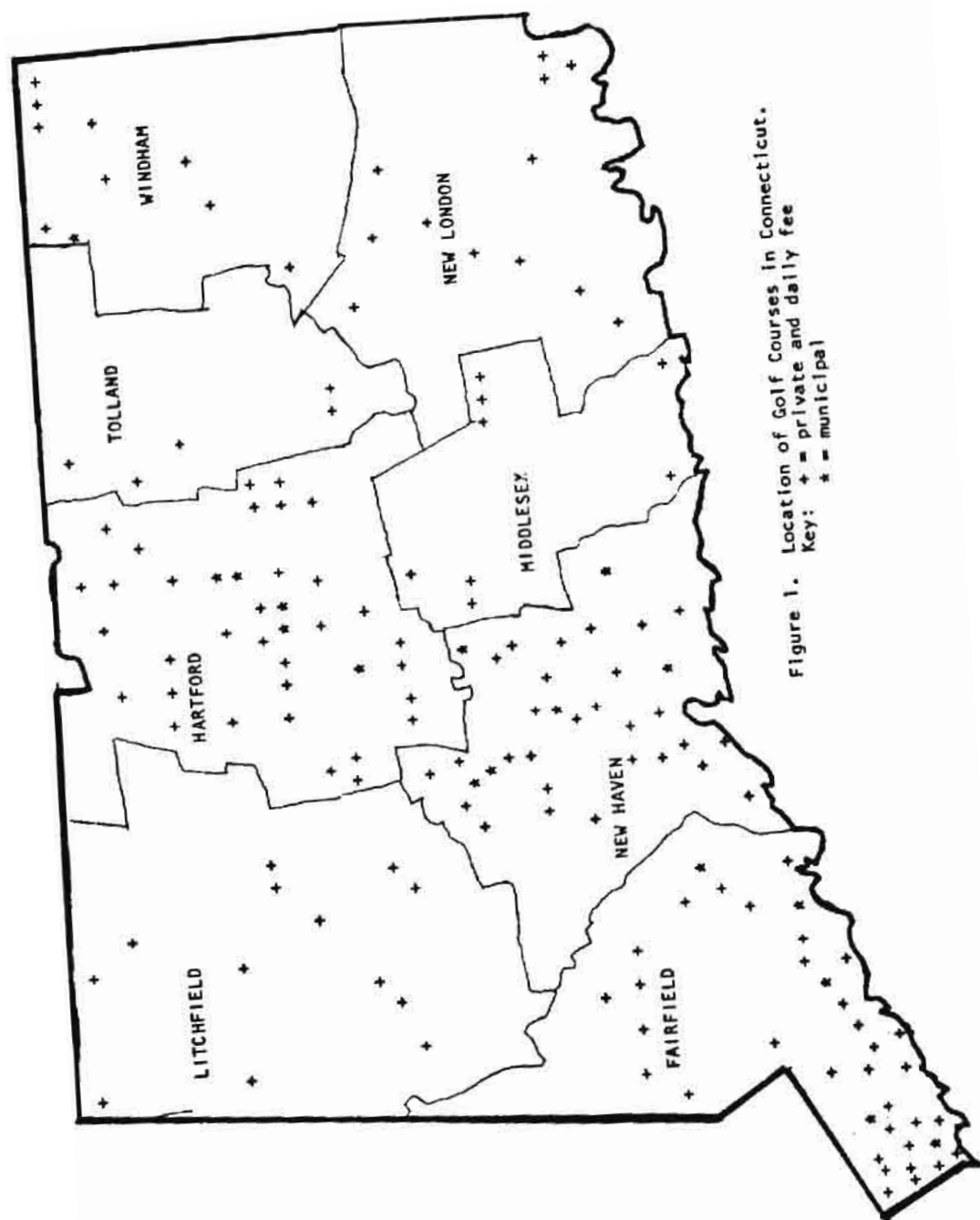


Figure 1. Location of Golf Courses in Connecticut.  
 Key: + = private and daily fee  
 \* = municipal

**Table 4. Growth in Size of Golf Course Firms in Connecticut and the U.S.<sup>1</sup>**

Year	Number Golf Courses <sup>2</sup>		Number of Fairways	Index Growth in Number of Fairways (1969 = 100)	Average Number of Fairways per Golf Course Firm
	9-hole	18-hole			
CONNECTICUT					
1969	63	100	2,367	100	14.5
1970	62	104	2,430	103	14.6
1972	74	108	2,628	111	15.3
1974	73	121	2,835	120	16.8
U.S.					
1969	5,277	4,649	131,175	100	13.2
1970	5,343	4,845	135,297	103	13.3
1972	5,989	5,385	150,831	115	14.1
1974	6,080	6,219	166,662	127	15.0

1. Source: National Golf Foundation Information Sheet ST 1, *National Golf Foundation, Chicago, Ill.* 1969, 1970, 1972 and 1974 issues.

2. Note that this is "courses" not "firms". Also note that "holes" and "fairways" are used interchangeably, i.e., a 9-hole course has 9 fairways.

### Maximum Golfer Capacity of the Market

Estimating the maximum capacity of Connecticut's golf market would seem to be a simple straightforward multiplication of the number of golf course firms times the golfer capacity per firm. Ultimately one does end up with such a multiplication, but a few preliminary steps are necessary. In our estimate of golfer capacity in Connecticut we make the following assumptions:

1. Average length of season is from March to November which is 273 days.
2. Average daily time golf courses are open for use is 8:00 a.m. to 7:00 p.m. which is 11 hours. (Open time varies being shorter in Spring and Fall and longer in Summer.)
3. Average length of starting time is 8:00 a.m. to 3:00 p.m. for 18-hole rounds and 8:00 a.m. to 5:00 p.m. for 9-hole rounds which are 7 hours and 9 hours respectively.
4. At 18-hole golf course firms, 60 percent of the rounds are 18-hole rounds and 40 percent are 9-hole rounds.
5. At 9-hole golf course firms, 50 percent of the rounds are 9-hole rounds and 50 percent are 18-hole rounds.

6. Inclement weather (rain or snow) causes closing or limited playability of the course 30 days out of the 273 day season.
7. Renovation and maintenance of courses cause closing of parts of a course especially in Spring and Fall for 10 days out of the 273 day season.
8. The average rate of play is 4 hours for 18 holes and 2 hours for 9 holes.
9. At the above rate of play a foursome starts every 6.5 minutes.

These assumptions are based largely on information obtained in the surveys of golf course firms. Given the above assumptions, estimates of supply capacity for 18-hole courses were calculated as follows:

$$G = 4F$$

$$F = X + Y$$

$$X = (T_x - \frac{1}{2}RY) \div R$$

$$Y = 2[(T_y - RX) \div R]$$

where:

G = Number of golfers per day per golf course

F = Number of foursomes per day

X = Number of foursomes playing 18 holes

Y = Number of foursomes playing 9 holes

$T_x$  = Minutes of starting time available per day for playing 18 holes

$T_y$  = Minutes of starting time available per day for playing 9 holes

R = Rate of start in terms of minute intervals between starting foursomes.

The capacity of an 18-hole course is doubled if golfers choose to play 9-hole rounds, therefore we divide by 2 in the X equation and multiply by 2 in the Y equation. We proceed by solving for Y as follows:

$$\text{Maximize } Y = 2[(T_y - RX) \div R]$$

Subject to

$$X = 1.5Y$$

The conditional statement,  $X = 1.5Y$ , is imposed by Assumption 4 which gives the expected proportions of 18 and 9-hole rounds. By substituting this conditional statement into the Y equation, we have

$$Y = 2[(T_y - 1.5RY) \div R]$$

Then by using data from the assumptions we have

$$Y = 2[(540 - (1.5)(6.5)Y) \div 6.5]$$

$$= 2(83 - 1.5Y)$$

$$= 41.5$$

$$X = 1.5(41.5)$$

$$= 62.25$$

$$G = 4(62.25 + 41.5)$$

$$= 415$$

Thus 415 is the maximum daily capacity of an 18-hole golf course given the assumptions stated. To calculate a maximum daily capacity of a 9-hole golf course we modify the above formulation as follows:

$$G = 4F$$

$$F = X + Y$$

$$X = \frac{1}{2} [(T_y - RY) \div R]$$

$$Y = (T_x - 2RX) \div R$$

In this case the capacity of a 9-hole golf course is halved if golfers choose to play 18-holes, therefore the role of 2 is reversed from the previous equations. Then we proceed to solve for Y as follows:

$$\text{Maximize } Y = (T_x - 2RX) \div R$$

Subject to

$$X = Y$$

In this case the conditional statement is based on Assumption 5 which requires that we find the capacity if half of the golfers play 9 holes and half play 18 holes. By applying data from the other assumptions we have

$$Y = [540 - (2)(6.5)Y] \div 6.5$$

$$= 83 - 2Y$$

$$= 27.7$$

$$X = Y$$

$$= 27.7$$

$$G = 4(27.7 + 27.7)$$

$$= 222$$

The solution of 222 is the estimated maximum daily capacity of a 9-hole golf course.

Obviously capacity estimates will vary according to length of starting time, rate of play, proportion playing 9 hole rounds and other variables. For this reason, attendance at many golf courses may, especially on holidays and weekends exceed the capacity estimates calculated above. However, the estimates appear to be reasonable as an average capacity representing all golf courses in Connecticut. It should be made clear that for now we are not discussing attendance but rather the amount of golfing capacity that golf course firms are prepared to offer. We shall discuss golfer attendance later.

The course capacities of 222 for 9-hole courses and 415 for 18-hole courses are shown in Table 5. By applying these estimates to number of courses and number of firms data, we obtain firm and market estimates on a per day and per year basis. The estimated average capacity per golf course firm for a 273 day season is 335 golfers per day and 91580 golfers per year. When all firms are taken together, the estimated total Connecticut market capacity is 15,476,978 golfers per year or 56,692 golfers per day (on a 273 day basis).



With this golf course supply information we have presented what is available. Next we turn to an examination of the extent to which these capacities are used.

## THE DEMAND SIDE OF THE MARKET

### Consumer Demand and Attendance

Practically all of the consumer demand for golf in Connecticut comes from within the state. It is estimated that there are about 260,000 Connecticut residents who play golf (Table 6). They participate at a rate of about 17 days per year. For 1974, we estimate that a total of 4,459,270 golfer-rounds were played by Connecticut residents. Of course, not all residents do all their golfing in Connecticut. Attendance and volume at Connecticut golf courses is estimated at 4,253,246 golfer-rounds which is 95 percent of the total estimated rounds played by Connecticut residents. In other words, the state's golf course firms can claim about 95 percent share of Connecticut golf market.

**Table 5. Estimates of Golf Course Supply Capacity in Connecticut**

Item	9-Hole Golf Firms	18-Hole Golf Firms	All Golf Firms
Course Capacity			
No. Courses	73	121	194
Golfers/day <sup>1</sup>	222	415	342
Golfers/year	51726	96695	79778
Firm Capacity			
No. Firms	64	105	169
Golfers/day <sup>1</sup>	253	478	393
Golfers/day <sup>2</sup>	216	408	335
Golfers/year	59000	111438	91580
Market Capacity			
Golfers/day <sup>1</sup>	16206	50215	66421
Golfers/day <sup>2</sup>	13831	42861	56692
Golfers/year	3775998	11700980	15476978

1. Based on 233 days per season (273 less 30 rain days and 10 maintenance days).

2. Based on 273 days per season.

**Table 6. Estimated Golfer Population, Participation and Attendance, Connecticut, 1974**

Golfer Population	
Total Conn. Population <sup>1</sup>	3,086,000
Percent of population participating in golf <sup>2</sup>	8.5
Golfer population	262,310
Golfer Participation	
Average number of rounds played per year per golfer <sup>3</sup>	17
Total golfer-rounds per year	4,459,270
Golfer Attendance <sup>4</sup>	
9-hole Firms: 64 firms x 16979 golfers =	1,086,656
18-hole Firms: 105 firms x 30158 golfers =	3,166,590
	<u>4,253,246</u>

1. Resident population as of July 1, 1974. Source: Population Characteristics Current Population Reports, Series P-20, No. 292, March 1976, p. 25.

2. Based on an approximation from estimates of 5, 7.5 and 12 percent from (1) Outdoor Recreation: A Legacy for America, Appendix A, Bureau of Outdoor Recreation, Dec. 1973, (2) National Golf Foundation and (3) the 1976 N.E. Recreation Survey, Dept. of Ag. Econ., U. of Conn., respectively.

3. Based on estimates of 8.13 per summer quarter (17.3 per season) by BOR and 28.2 per year by the 1976 N.E. Recreation Survey. References given in footnote 2 above.

4. See Table 7 for source of attendance data.

### **Growth in the Golfer Population**

The demand for golf grows as population grows and for that reason alone demand grows at about 1-2 percent per year. Beyond that golf is becoming more popular to a larger proportion of the population. Consequently, demand has increased recently from 5 percent of the population to 8-9 percent of the population participating in golf (see footnote 2 of Table 6). It is quite probable that demand in Connecticut has been growing recently at about the same rate (approximately 5 percent) that golfing capacity has increased (see Table 4).

**Seasonal Pattern of Attendance**

A typical 9-hole golf course firm has an average attendance of about 1900 golfers per month and an 18-hole firm averages around 3300 golfers a month. Starting in March, a few “early birds” provide some business at a rate of about 1000 per month (Table 7). Then attendance rapidly increases in April, May and June reaching a peak in July. August, September and October are declining months as far as attendance is concerned and November is the season’s closing month with attendance down to 600-1200 per month. This pattern of attendance is quite long and moderately stable compared to seasonal patterns for most other outdoor recreation activities in the Northeast.

**Daily Attendance Patterns**

While the monthly attendance is comparatively stable, a great deal of variation in attendance occurs on a daily basis similarly to most other outdoor recreation activities. On week days (Monday-Friday) attendance averages 51-82 golfers per day (Table 8). Then on weekend days attendance more than doubles averaging 110-209 golfers per day. On holidays the averages jump to 151-418.

**Table 7. Golfer Attendance at Typical 9-Hole and 18-Hole Golf Course Firms in Connecticut, by Months, 1974<sup>1</sup>**

Month	Golfer Attendance			
	9-Hole Golf Course Firm		18-Hole Golf Course Firm	
	Number of golfers	Percent of season total	Number of golfers	Percent of season total
March	1103	7	946	3
April	1915	11	2782	9
May	2363	14	4615	15
June	2603	15	4730	16
July	2774	16	4965	17
August	2557	15	4441	15
September	1784	11	3823	13
October	1253	7	2593	8
November	627	4	1263	4
Total	16979	100	30158	100

1. Source: The 1971 and 1974 surveys of Connecticut golf firms.

**Table 8. Average Daily Golfer Attendance at Typical 9-Hole and 18-Hole Golf Course Firms in Connecticut, by Weekdays, Weekends and Holidays, 1974**

Type of Day	Average Daily Golfer Attendance	
	9-Hole Golf Course Firms	18-Hole Golf Course Firms
	(Number of golfers)	
Weekday	51	82
Weekend	110	209
Holiday	151	418

To the extent that attendance data partially reflect demand, it may be concluded that demand for golf is fairly stable over the seasonal time frame, but typically erratic on a daily basis.

#### COMPARISON OF ATTENDANCE RATES WITH CAPACITY RATES

Many golfers have experienced a "waiting time" before getting to tee-off on a busy golf course. In fact, some golf courses require reservations in advance to play on weekends and holidays. It is easy for golfers facing such situations to conclude in layman's words that "demand exceeds supply" in the golf market. Such a conclusion bothers economists even though they understand that laymen are simply describing an overcrowded condition. Economists prefer to describe such a situation as one where "attendance exceeds capacity." Perhaps more importantly, such an overcrowded condition at a given time and place is usually not the same for the market as a whole and over a longer time period. The point is that a golfer's perspective of a crowded (excessive attendance) market situation may be clouded by observations taken only on peak attendance days. Such a person may think that a golf enterprise must indeed be a highly profitable investment and probably wonders why more golf courses are not built to handle all of that "excess demand."

Most managers of golf course firms, on the other hand, experience not only those busy days, but many "uncrowded" days and at least 3 months a year without any business. It is quite possible, therefore, that a manager's perspective of the golf market may be clouded by observations of "slow or low volume" days which may lead them to conclude that the market has an "excess supply" of golf courses.

Actually the golf market demand-supply balance lies somewhere between these two extremes. Technically, our estimates indicate that for the market as a whole, on a full season basis, attendance runs at 28 percent of capacity (29 and 27 percent for 9-hole and 18-hole golf course firms as given in Table 9). This implies considerable excess capacity, however, one must realize that capacity is spread evenly over a 9 month



period whereas attendance bunches-up on holidays and weekends and reaches a peak in July. Rather than using an overall average ratio, it may be more appropriate to use a weekend "attendance-to-capacity" ratio. Using this measure we can say that the market as a whole was operating on the average at roughly 44 percent of capacity for the season in 1974. Although not readily apparent from the data shown in the table, there are days when the market operates at full capacity. Holidays, especially Memorial Day and July 4th, are generally high or full capacity days as indicated by the 72 and 101 capacity ratios shown in the table. Also many weekends in June and July are full capacity days; these are hidden in the averages since averages are measures of central tendency.

Operating at less than full capacity most of the time and at full capacity part of the time is probably "normal" and satisfactory from a recreational standpoint. If golfers were processed through a golf course in such a way that 4 persons teed-off at precisely every 6.5 minutes and were required to keep a continuous pace throughout the course, then the disciplined, routine nature of the activity would likely destroy much of the sought-after recreational value of golf. From a quality standpoint, it may be reasonable to evaluate a golf market as performing well if it is operating at an average of 44 percent of capacity on weekends for the season as a whole.

#### OPERATIONS MANAGEMENT FOR PROFIT

While operating at 44 percent of capacity on weekends or 27 percent of capacity overall may be satisfactory from the viewpoint of golfers seeking a high quality recreational experience, it may not be economically efficient from a resource efficiency standpoint. Can an individual or organization profitably manage and operate a golf course firm on a 27 percent of capacity volume of business?

#### **Estimates of Return on Investment**

To obtain information for answering this question, we estimated the potential income for two hypothetical golf course firms using data from the 1971 and 1974 Connecticut Golf Course Surveys. Income statements were prepared for typical golf course firms, one a 9-hole operation and the other an 18-hole operation.

Gross returns for a 9-hole firm were estimated to be \$98,740 (Table 10). After subtracting \$77,907 for expenses, we obtain \$20,833 as the net income or the return on investment. Taking \$20,833 as a percent of \$436,100, which is the total investment value of the firm, we obtain 4.8 percent as the rate of return on investment. Using the same procedure for a typical 18-hole golf course firm we obtain \$188,547 in gross returns, \$167,362 in expenses and a 2.5 percent rate of return on investment.

**Table 9. Comparison of Golfer Attendance Rates with Golfer Capacity Rates in Connecticut, by Firms and Market, 1974**

Item		9-Hole Golf Course Firms			18-Hole Golf Course Firms		
		Average Attendance	Estimated Capacity	Percent Attendance of Capacity	Average Attendance	Estimated Capacity	Percent Attendance of Capacity
Firms							
Golfers/day:	Ave for Season	62	216 <sup>1</sup>	29	110	408 <sup>1</sup>	27
	Weekdays	51	253	20	82	478	17
	Weekends	110	253	43	209	478	44
	Holidays <sup>2</sup>	183	253	72	483	478	101
Golfers/year		16979	59000	29	30158	111438	27
Market							
Golfers/day		3980	16206	25	11599	50215	23
Golfers/year		1086656	3775998	29	3166590	11700980	27

1. Based on a 273 day season (see Table 5).

2. Memorial day and July 4th.

**Table 10. Estimated Income of Typical 9-Hole and 18-Hole Golf Course Firms in Connecticut, 1974<sup>1</sup>**

Item		9-Hole Golf Course Firm	18-Hole Golf Course Firm
Returns			
Greens fees <sup>1</sup>			
9-hole rounds		8079(\$3.30) = \$26,661	11404(\$3.30) = \$37,633
18-hole rounds		8900(\$6.00) = 53,400	18754(\$6.00) = 112,524
Rentals			
Hand carts (10% of rounds)		1698(\$ .50) = 849	3016(\$ .75) = 2,262
Riding carts (5% of rounds)		849(\$8.00) = 6,792	1508(\$9.00) = 13,572
Golf clubs (10% of rounds)		1698(\$1.75) = 2,972	3016(\$2.50) = 7,540
Pro shop (10% of greens fees)		8066(.10) = 8,066	15015(.10) = 15,016
Total returns		98,740	188,547
Expenses			
Cash costs			
Labor			
Full time		3(1715 hrs.)( \$6.00) = \$30,870	10(1575)( \$6.00) = \$94,500
Part time		4(630 hrs.)( \$4.50) = 11,340	4(385)( \$4.50) = 6,930
Fertilizer		9(\$300/fairway) = 2,700	18(\$300/fairway) = 5,400
Spraying materials		9(\$300/fairway) = 2,700	18(\$300/fairway) = 5,400
Electricity		12 mo. (\$200) = 2,400	12 mo. (\$300) = 3,600

Table 10. Continued

Item	9-Hole Golf Course Firm	18-Hole Golf Course Firm
Fuel	1,500	3,000
Supplies	1,500	3,000
Repairs	1,000	2,000
Advertising & dues	1,000	2,000
Pro shop goods	4,000	8,000
Property taxes	$241,000(.02) = 4,820$	$434,800(.02) = 8,696$
Insurance on bld. & equip.	$101,100(.02) = 2,022$	$154,800(.02) = 3,096$
Total cash costs	65,852	145,622
Non-cash costs		
Depreciation	$\$241,100(.05) = \$12,055$	$434,800(.05) = \$ 21,740$
Total expenses	\$77,907	\$167,362
Net income	\$20,833	\$ 21,185
Rate of return on investment <sup>3</sup>	$20,833 \div 436,100 = 4.8\%$	$21,185 \div 839,800 = 2.5\%$

1. Estimates were made in large part using data from 1971 and 1974 surveys. Therefore prices may be outdated, however, the types of returns and costs have remained basically unchanged.

2. See Appendix Table 3 for detailed data on number of 9-hole and 18-hole rounds.

3. See Appendix Table 2 for detailed data on investment value.



These estimates suggest that golf course operations may not be very profitable at the average volumes of 16,979 and 30,158 golfers per year for 9-hole and 18-hole golf course firms, respectively. To be considered profitable the rate of return on investment should be greater than or equal to the market interest rate. If typical golf course firms, such as the two analyzed here, require use of credit in financing their operations (most firms do), and if the credit interest rate is, as currently, 9 percent, then the investment criterion would not be met given the estimates of 4.8 percent and 2.5 percent rates of return.

### **Evaluation of Income Prospects**

Apparently golf course firms survive and some may even flourish in spite of the implied low returns on investment. How then can we explain this seemingly contradiction? One possibility, of course, is that our estimate is in error. Admittedly we synthesized returns and expenses from somewhat sketchy survey data. However, our estimates of labor expenses are conservative compared with those reported in the survey. A second possibility is that golf course firms can survive with a low operating return on investment as long as inflation provides capital gains. A firm can use a non-cash expense such as that allocated for depreciation, for paying credit interest and debt retirement, at least in the short run. A third possibility is that if we had used the original investment value instead of the current investment value as the denominator in calculating rates of return we would have obtained higher rates of return. Actual outlays for land and buildings were probably made over 15 years ago when prices were much lower. We used current investment values because we had not asked for original prices paid for land and capital resources in the survey. Taking these possibilities into consideration, we conclude that potential operating income for golf firms is probably low, but capital appreciation is probably sufficiently high that taken together the two forms of income make golf firms profitable even at an average 28 percent of capacity level.

### **Management Strategies**

A golf course operation is both capital-intensive and labor-intensive, but in different time orientations. Capital costs continue year-round while labor costs concentrate primarily in the summer months. Management must try to use both capital and labor efficiently to maximize income. The following are examples of the kind of strategies that can be used by managers and owners to improve operational efficiency:

1. Spread the flow of business more evenly throughout the week by using more effective differential pricing for weekends and weekdays.

2. Encourage the organization of golf leagues, tournaments, special events, etc., to achieve a greater commitment of clientele.
3. Spread the use of a course more evenly throughout certain days by using differential pricing for high and low use hours of the day.
4. Discourage or eliminate 18-hole rounds on peak attendance days to allow more players per day.
5. Add Par-3 or Executive size courses when expanding operations to accommodate golfers who prefer shorter playing time.
6. Add supplemental enterprises such as cross country skiing to use the land resources year-round.

### SUMMARY

With the demand for golf growing and the price of land skyrocketing, managers of golf courses play a key role in finding ways to minimize overcrowding and maintain a satisfactory level of income from their operations.

The purpose of this report is to provide information of growth trends in the Connecticut golfing market, capital investment requirements for owning a golf course and the income potential from operating a golf course. Primary data for Connecticut were obtained from a survey of twenty-one golf courses in 1971 and 1974. Secondary data were obtained largely from National Golf Foundation reports.

The golf market is one of the largest and oldest outdoor recreational enterprises in Connecticut.

In 1974, the state's 169 golf course firms had an estimated capital value of over \$100 million and had gross returns of over \$26 million.

Growth in number of golf course firms appears to be slowing down while growth in size of firms in terms of number of fairways continues in Connecticut. Apparently, increases in future supplies of golfing facilities will come primarily from expansion of existing golf course firms if the present trend continues. Moreover, with the average market radius being 28 miles for 18-hole golf course firms (13 miles for 9-hole firms), it is unlikely that the supply of golfing will spread very far beyond its present proximity to concentrated population centers.

Using average data on starting times, rate of play, length of golfing day, length of season and proportions of playing 9 and 18-hole rounds, we calculated the golfer capacities of golf course firms and the Connecticut market. The calculated daily capacities were 222 golfers for 9-hole courses and 415 for 18-hole courses. At these rates the average capacity for a year is 91,580 golfers for a firm and 15,476,978 golfers for the Connecticut market.

Attendance varies on a daily basis being very high on weekends and holidays and relatively low on weekdays. Our estimates indicate that at-

tendance runs on the average at 43-101 percent of capacity on weekends and holidays, but drops to 28 percent of capacity as a season average for the Connecticut market as a whole. This low attendance/capacity ratio may suggest that ample supply exists to handle future growth in demand for golfing. However, the weekend and holiday ratios are perhaps the best indicators of demand-supply balance and they indicate near-to-full capacity. A golf market which operates at a low attendance/capacity ratio most of the season and at a high ratio part of the season is probably "normal" and satisfactory from a recreational benefit standpoint. Thus consumers may obtain higher quality recreation if the market operates at less than full capacity.

On the other side of the market, suppliers of the golf facilities must use resources efficiently to maintain an economically sound operation. Using the average attendance data, we estimated that typical 9-hole and 18-hole firms would obtain a 4.8 percent and a 2.5 percent rate of return, respectively. These estimates suggest that golf course operations on the average may not be very profitable. However, when potential capital gains are also taken into consideration, the combined return may make golf firms profitable even at a 28 attendance/capacity ratio.

In the future, as golf course firms expand and devise marketing strategies to spread the growing demand more evenly throughout the week and season, attendance/capacity ratios may increase. With proper management and careful planning, quality of recreational experiences can be maintained even if demand grows faster than supply in the next decade.

#### REFERENCES

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**Appendix Table 1. Data on Golf Course Firms Surveyed in Connecticut, 1971 and 1974<sup>1</sup>**

Item	Unit	9-Hole Golf Course Firms		18-Hole Golf Course Firms	
		No. Reporting	Average	No. Reporting	Average
Land					
Developed	acres	4	65	16	141
Undeveloped	acres	5	41	16	20
Age of firm	years	5	36	16	31
Greens fees	\$/18 holes	5	6.01	16	6.09
	\$/9 holes	5	3.30	8	3.30
Rental fees					
Riding carts	\$/round	4	8.25	11	9.45
Hand carts	\$/round	4	.56	7	.75
Clubs	\$/round	4	1.75	9	2.50
Length of season	months	5	9.0	16	8.2
Daily volume					
Memorial Day	golfers	3	183	13	483
July 4th	golfers	3	183	13	483
Labor Day	golfers	4	168	12	473
Columbus Day	golfers	3	72	8	234
Average	golfers		151		418



Appendix Table 1. Continued

Item	9-Hole Golf Course Firms			18-Hole Golf Course Firms	
	Unit	No. Reporting	Average	No. Reporting	Average
Weekdays in:					
March	golfers	4	40	13	25
April	golfers	4	56	13	71
May	golfers	4	56	13	108
June	golfers	4	71	13	122
July	golfers	4	73	13	118
August	golfers	4	71	13	120
September	golfers	4	44	13	87
October	golfers	4	26	12	57
November	golfers	4	18	13	31
Average	golfers		51		82
Weekends in:					
March	golfers	4	43	13	60
April	golfers	4	108	13	184
May	golfers	4	145	13	274
June	golfers	4	160	13	310
July	golfers	4	156	13	294
August	golfers	4	154	13	278
September	golfers	4	101	13	224
October	golfers	4	89	13	168
November	golfers	4	36	13	87
Average			110		209

Appendix Table 1. Continued

Item	Unit	9-Hole Golf Course Firms		18-Hole Golf Course Firms	
		No. Reporting	Average	No. Reporting	Average
Proportion of golfers playing 9 and 18 holes					
9 holes	%	4	48	13	38
18 holes	%	4	52	13	62
Values of Assets					
Land	\$	1	200,000	8	1,031,250
Building	\$	1	50,000	11	317,000
Equipment	\$	2	11,000	10	57,000
Gross income	\$	3	77,000	7	124,000
Gross expenses	\$	3	63,000	10	86,000
Labor					
Employees:					
Full-time	No.	5	3.8	16	17.1
Part-time	No.	5	4.0	16	4.2
Total	No.	5	7.8	16	21.3

Appendix Table 1. Continued

Item	Unit	9-Hole Golf Course Firms		18-Hole Golf Course Firms	
		No. Reporting	Average	No. Reporting	Average
Hours					
Full-time	Hrs./week	5	49	15	45
Full-time (35 wks.)	Hrs./year	-	1715	-	1575
Part-time	Hrs./week	4	18	15	11
Part-time (35 wks.)	Hrs./season	-	630	-	385
Course Maintenance					
Greens	times/week	1	4	10	3
	Hours/week	1	20	10	26
Fairways	times/week	1	2	10	3
	Hours/week	1	20	10	29
Tees	times/week	1	2	9	3
	Hours/week	1	8	9	18
Rough	Hours/week	1	16	7	30
Market radius	Miles	5	13	15	28

1. Ten golf course firms were surveyed in 1974 and 11 were surveyed in 1971.

**Appendix Table 2. Estimated Land and Capital Value of Typical 9-Hole and 18-Hole Golf Course Firms in Connecticut<sup>1</sup>**

Item	9-Hole Golf Firms	18-Hole Golf Firms
Land (65 A.)	\$195,000 (135 A.)	\$405,000
Capital Resources:		
Buildings		
Club house	\$ 50,000	\$ 75,000
Storage	20,000	35,000
Total buildings	\$ 70,000	\$110,000
Equipment		
Truck	4,500	4,500
Tractor	6,000	6,000
Mowers (4)	10,000	(7) 18,000
Power sprayer	3,000	3,000
Aerifiers (2)	2,900	(2) 2,900
Power topdresser	1,200	1,200
Power sweeper	—	3,000
Sand trap raker	—	2,700
Other equipment	1,000	1,000
Shop tools	2,500	2,500
Total equipment	31,100	44,800
Water system	50,000	100,000
Course Development	90,000	180,000
Capital Value	241,100	434,800
Total land and capital value	\$436,100	\$839,800

1. Estimates were made in large part using data from 1971 and 1974 surveys. Therefore the values may be outdated, however the types of capital resources have remained basically unchanged.

**Appendix Table 3. Average Seasonal Volume of Golf Rounds Played at 9-Hole and 18-Hole Golf Course Firms in Connecticut, 1974<sup>1</sup>**

Item	9-Hole Firms	18-Hole Firms
Weekday volume		
No. of weekdays	192	192
Ave no. golfers per weekday	51	82
No. playing 9-hole rounds <sup>2</sup>	24	31
No. playing 18-hole rounds <sup>2</sup>	27	51
Total weekday 9-hole rounds	4608	5952
Total weekday 18-hole rounds	5184	9792
Weekend volume		
No. of weekend days	77	77
Ave. no. golfers per weekend day	110	209
No. playing 9-hole rounds	53	79
No. playing 18-hole rounds	57	130
Total weekend 9-hole rounds	4081	6083
Total weekend 18-hole rounds	4389	10010
Holiday volume		
No. of holidays	4	4
Ave. no. golfers per holiday	151	418
No. playing 9-hole rounds	72	159
No. playing 18-hole rounds	79	259
Total holiday 9-hole rounds	288	636
Total holiday 18-hole rounds	316	1036
Seasonal total volume		
9-hole rounds	8977	12671
Less 10% for rain days <sup>3</sup>	<u>898</u>	<u>1267</u>
Net 9-hole rounds	8079	11404
18-hole rounds	9889	20838
Less 10% for rain days	<u>989</u>	<u>2084</u>
Net 18-hole rounds	8900	18754
Total rounds (net)	16979	30158
Average per day	62	110

1. Season = 273 days total.

2. At 9-hole firms 48% are 9-hole rounds and 52% are 18-hole rounds. At 18-hole firms 38% are 9-hole rounds and 62% are 18-hole rounds.

3. The number of rain days (which reduce attendance significantly) averages about 30 per season, i.e. about 10% of the season total days.